

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : BOX PATENT APPLICATION

Yves LE DU et al. : Examiner: Unassigned

Serial No.: Unassigned : Group Art Unit: Unassigned

Filed: March 30, 2001 :

For: STRUCTURE COMPRISING A BINDER LAYER NON-DELAMINABLE WITH  
RESPECT TO A METALLIZED SUBSTRATE AND PEELABLE WITH RESPECT  
TO A POLYPROPYLENE SUBSTRATE

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination, Applicants wish to amend the above-identified application as indicated below:

**IN THE CLAIMS**

Please amend the claims as follows:

Please cancel claims 1-15 without prejudice or disclaimer.

Please add the following claims:

-- **16.** A multilayer structure comprising a metal layer or a metallized-substrate layer (5) and a polypropylene-based binder layer (6) extrusion-coated at a rate of more than 100 m/min. onto the metal or metallized-substrate layer, said layers (6, 5) being made non-delaminable by heat treating the said structure to a temperature above the melting point of the binder layer (6).

**17.** A structure according to claim 16, wherein the heat treatment is carried out by infrared radiation, by passing it through a hot-air or induction-heating tunnel.

**18.** A structure according to claim 16, wherein said structure comprises a polypropylene layer (7, 2) having a melting point above the melting point of the binder, the binder layer (6) being sandwiched between the metal layer metallized-substrate layer (5) and the polypropylene layer (7, 2), the heat treating being at a temperature below the melting temperature of the polypropylene layer.

**19.** A structure according to claim 18, wherein said structure is peelable with a peel force for peeling the binder layer (6) off the polypropylene layer (7, 2) of between 8 and 15 N/15 mm.

**20.** A structure according to claim 16, wherein the extrudable binder comprises by weight:

- 5 to 30% of a copolymer (A) based on ethylene and one or more comonomers chosen from the group consisting of carboxylic acid esters, vinyl esters and dienes;
- 40 to 93% of a stretchable polypropylene (B), stretchability being defined as the ability of a rod extruded at a temperature of between 190°C and 240°C and pulled at a pull rate of between 50 and 250 m/min. without breaking;
- 2 to 30% of a polypropylene (C) functionalized by an unsaturated carboxylic acid anhydride;
- the MFI of the composition being between 10 and 50 g/10 min. (at 230°C/2.16 kg).

**21.** A structure according to claim 20, wherein the copolymer (A) of the binder comprises an ethylene/alkyl (meth)acrylate copolymer containing from 5 to 40% by weight of alkyl (meth)acrylate, the MFI being between 0.5 and 200 g/10 min. (at 190°C/2.16 kg).

**22.** A structure according to claim 20, wherein the copolymer (A) of the binder comprises an ethylene/alkyl (meth)acrylate/maleic anhydride copolymer containing from above

0 to 10% by weight of maleic anhydride and from 2 to 40% by weight of alkyl (meth)acrylate, the MFI being between 0.5 and 200 g/10 min. (at 190°C/2.16 kg).

**23.** A structure according to claim 20, wherein the copolymer (A) of the binder is a blend of copolymers (A), an ethylene/alkyl (meth)acrylate copolymer containing 5 to 40% by weight of alkyl (meth)acrylate, and an ethylene/alkyl (meth)acrylate/maleic anhydride copolymer containing from above 0 to 10% by weight of maleic anhydride and from 2 to 40% by weight of alkyl (meth)acrylate.

**24.** A structure according to claim 20, in which the proportion of polypropylene (C) of the binder is between 1.5 and 6%, said polypropylene (C) containing from 1.5 to 6% by weight of maleic anhydride.

**25.** A structure according to claim 20, in which the proportion of polypropylene (C) of the binder is between 10 and 25%, said polypropylene (C) containing from 0.8 to 1.5% by weight of maleic anhydride.

**26.** A structure according to claim 20, in which the proportion of polypropylene (C) of the binder is between 3 and 5%, said polypropylene (C) containing from 1.5 to 3% by weight of maleic anhydride.

**27.** A cover (4) comprising a structure according to claim 15, in which the metal of the metal or metallized-substrate layer (5) is aluminium.

**28.** A package made of polypropylene or of a material covered with polypropylene, sealed by a cover (4) according to claim 27.

**29.** A package made with a structure according to claim 15.

**30.** A package according to claim 29, characterized in that it is sterilizable and resistant to food acids and high-performance solvents and greases.

31. A structure according to claim 21, wherein the ethylene/alkyl (meth)acrylate copolymer contains 10-40% by weight of the alkyl acrylate.

32. A structure according to claim 22, wherein the ethylene/alkyl (meth)acrylate/maleic anhydride copolymer contains 5 to 40% by weight of the alkyl meth(acrylate).

33. A process of producing the multi-layer structure of claim 16, comprising the step of extrusion-coating said polypropylene-based binder layer at a rate of more than 100 m/min. onto said metal or metallized substrate layer, and heat treating the resultant extrusion coated structure at a temperature above the melting point of the binder layer.

34. A process of producing the multi-layer structure of claim 18, comprising the step of extrusion-coating said polypropylene-based binder layer at a rate of more than 100 m/min. onto said metal or metallized substrate layer, and heat treating the resultant extrusion coated structure at a temperature above the melting point of the binder layer, said heat treating being at a temperature below the melting temperature of the polypropylene layer.

35. A process of producing the multi-layer structure of claim 20, comprising the step of extrusion-coating said polypropylene-based binder layer at a rate of more than 100 m/min. onto said metal or metallized substrate layer, and heat treating the resultant extrusion coated structure at a temperature above the melting point of the binder layer. --

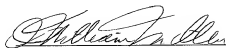
#### **REMARKS**

New claims 16-30 mirror original claims 1-15, but without any multiply dependent claims, thereby facilitating examination on the one hand, and reducing fees on the other hand.

New claims 31 and 32 are based on the preferred values set forth in original claims 6 and 7, of alkyl (meth)acrylate. The remaining claims are directed to a process of producing the structure.

For the record, Applicants reserve the right to reintroduce claims directed to canceled combined subject matter.

Respectfully submitted,



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